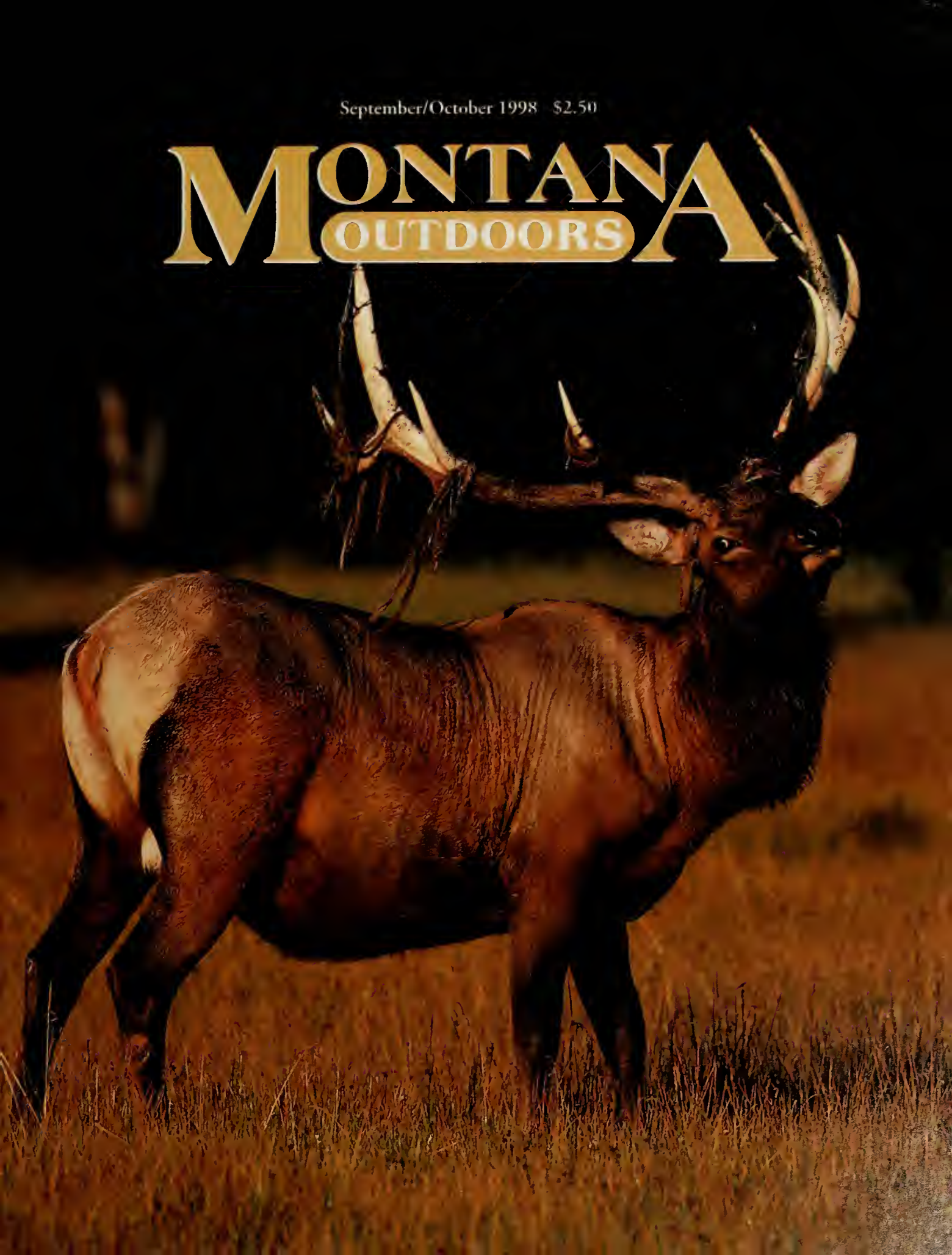
September/October 1998 $2.50

MONTANA OUTDOORS



Our Point of View

DENVER BRYAN

There is nothing quite like autumn in Montana. Clear, warm days and crisp nights beckon you to the sagebrush hills and rivers. Golden aspen leaves emerge from a sea of evergreens. It's also a great time to fish and hike, because most everyone goes hunting.

We have the second highest per capita number of resident hunters in the country, and we attract big game and upland bird hunters from across the nation.

And as predictable as the change in seasons, every year my phone starts ringing a couple of days after we mail out special permits to those lucky enough to draw a moose, sheep, goat, antelope, or special elk tag. "I've been putting in for twenty years and never gotten a tag," says one disgruntled hunter. "If I don't get a tag soon, I'll be too old to use it," says another.

Although drawing a tag is more likely than winning the Power Ball Lottery, odds are you may not draw one in your lifetime for species like bighorn sheep or moose. In a few districts the chance is as low as one in a hundred.

The Fish, Wildlife & Parks Commission asked to have legislation drafted that would allow them to establish a preference system. They recognize that past systems have failed either because they provided too little benefit, were unfair, or were too costly to maintain.

I have appointed a Preference 2001 Advisory Committee to examine past and current systems and make recommendations to the FWP Commission in time for the 1999 Legislature. They will seek answers to whether those who apply unsuccessfully year after year can imptove their chances. Will a first-time hunter still have a chance? How much are we willing to limit our choices to improve the odds of success? Can we keep it affordable? These are tough questions. We should be thankful, though, that we have these choices to make. Over 100 years ago hunting limits were liberal and game was scarce. Today, through sound management, our wildlife resources have expanded; so too has public interest.

Patrick J. Graham, Director
Montana Fish, Wildlife & Parks

ERWIN & PEGGY BAUER

Rubbing dried velvet from their antlers is an annual ritual for bull elk (page 22).

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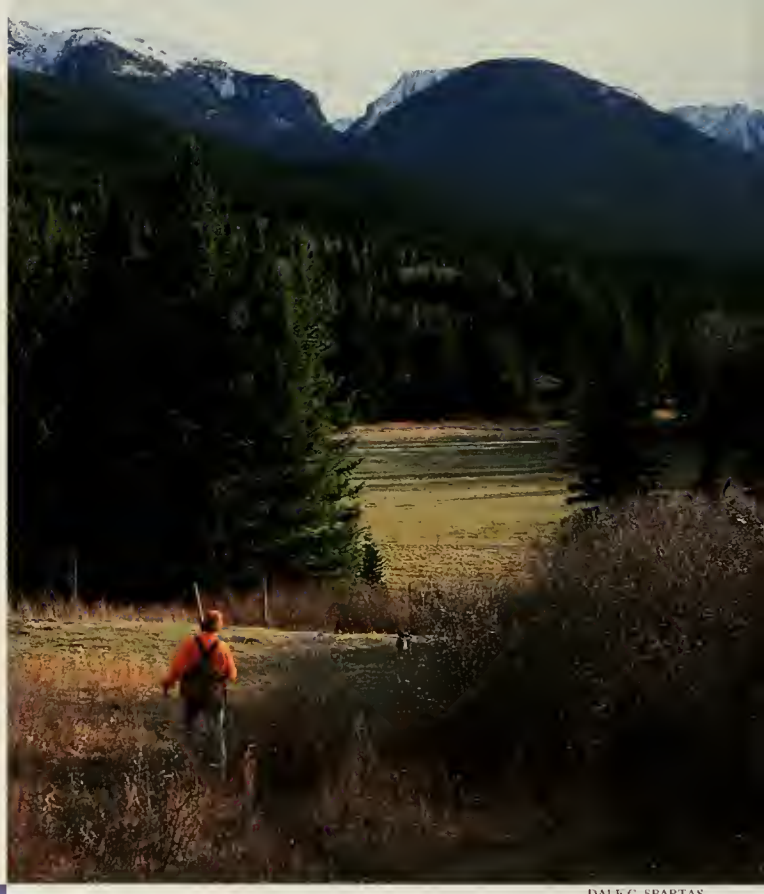
Grouse
of a
Different
Color
DENVER BRYAN

by Dave Carty

IT WAS A GREAT LITTLE PLACE. All you had to do was sign a register on the front porch and several hundred acres of upland bird hunting was yours for the day. Like all deals that are too good to be true, this one didn't last long, and a year or two later the farm changed hands. Exit the big western welcome; enter no trespassing signs. Big surprise.

But that December I spent 15 minutes chugging up a rutted gumbo road slick with rotting ice, parked my car in the drive, and then post-holed through shin-deep snow to the mountains beyond, my spaniel, Poke, lurching along beside me. We had a fix on a small spring surrounded by aspens, and upon reaching it, Poke promptly flushed a snipe, still in season at that late date. I dropped the little bird and the thought crossed my mind



DALE C. SPARTAS

Western ruffed grouse aren't always where they're supposed to be, but brushy areas along streams are a good bet.

that if I could find a ruffed grouse or two, this would almost be like a mixed-bag woodcock/grouse hunt back East.

Since I've never been back East, bird hunting or otherwise, I don't know how much of the ensuing episode paralleled an eastern bird-hunting experience, but Poke did flush a grouse, which flew exactly 10 feet before landing on a bare aspen branch a few yards before me. We stared at each other.

I waved my arms, but still the bird stared.

I inched toward him. He watched me approach, until I was standing directly below him. He peered down between his feet. I peered up between his feet. "Boo," I said.

The grouse looked at me.

Seized with inspiration, I poked him in the belly with my shotgun. The silly creature sidestepped closer to the trunk, and then, hunching over, roared into flight. I threw my gun to my shoulder and fired a scant second or two before he alit in another tree some 20 yards away.

DAVE BOOKS

While pointing breeds like this Brittany are favored by grouse hunters, Labs and springers have their place.

And didn't move.

Ten minutes later, I'd flushed and missed three more times. The bird finally flew around a hill and disappeared.

Thank God they're not all like that.

Contrary to local opinion, I've found that about half of Montana's ruffed grouse flush from the ground in classic form, although a fair percentage of those end up in trees. Nevertheless, a flushing grouse is a flushing grouse, and they're never easy to hit.

Those few easterners I know who have hunted Montana ruffs are amazed at the bird's comparative docility. I can see their point. I've hunted ruffs in northern Minnesota, where they're pursued by double barrel-toting traditionalists, and the birds there are considerably less social around humans.

Here in God's country, however, they just don't get hit that hard, other than by elk hunters who nail them with bows, probably the biggest source of human-caused grouse mortality each season. People who actually make sport out of hunting ruffs, in the same way they make sport out of hunting Huns or pheasants, are unusual to the point of being an aberration. Yet, in the very few Montana coverts I've hunted where grouse have been shot at by someone other than me, they're quick learners.

I'm thinking now of a place I discovered when I first moved here. It's a small section of state land covered with hawthorn bushes, the berries of which the grouse love. Consequently, they're invariably buried deep within the midst of the godawful things, bushes that bristle with thorns as terrible as anything this side of Vlad the Impaler.

On one trip, I invited a friend to go along. In the interests of tradition, he brought his almost pure white setter, Toby. Shortly into that hunt, Toby flushed (or pointed, we never really knew) a grouse which sailed around the bend of a hill before burrowing into a thicket of hawthorns. Upon arriving at said thicket, my buddy sent his setter in, but the dog disappeared. I sent in my springer,

Montana ruffed grouse, like their eastern counterparts, prefer heavy cover where aspen buds and berries abound. Getting a clear shot is never easy.

TIM CHRISTIE

who also failed to return.

Since we could hear the dogs shuffling around, we figured the bird was still in there. After all, it's hard to miss the sound of a flushing grouse. I thought for a moment, then volunteered. "I'll go in," I said. Stupidly, as it turned out.

There was no way I was going to get a shot, so I left my shotgun with my friend, who had posted himself on the opposite side of the hawthorn patch. Twenty feet into the place—I was crawling on my hands and knees at this point—I spotted the bird bobbing on a branch just inches above the heads of the dogs, who for some reason hadn't scented it. I tossed my hat at the creature, which flushed up through a tangle of thorns, got hung up momentarily, and then burst into the open, streaking for daylight. A second later my friend's 12-gauge boomed, once. When I emerged, bleeding, from the bushes, he held up the grouse for me to see.

DAVE CARTY

As anyone who has ever hunted them will tell you, ruffed grouse aren't found in just any old place. On the other hand, they're not always found where they're supposed to be, either. Generally speaking, Montana's ruffs gravitate to riparian habitat, but the aspens they normally prefer don't seem to be an absolute requirement. I've found grouse in thick stands of conifers along riverbottoms, where the trees virtually shaded out all undergrowth. I've also found them in the dead of winter in conifers several hundred yards away from any streambottom, and along sandy trails in Yellowstone Park.

Nevertheless, those aren't places I'd choose to hunt. I look for birds in and around aspens, particularly those near seeps or streams. And I would certainly expect to see birds anywhere there were berries of almost any kind: hawthorn berries, snowberries, huckleberries, and even raspberries.

Aspen buds, of course, are traditional grouse fare, here and elsewhere. But buds seem to be a minor source of food through most of Montana's huntable—which means before the snow flies—bird season. A few years ago, I spoke to a wildlife biologist, also a bird hunter, who told me that aspen buds were primarily a winter food for the state's ruffs, and that the birds ate berries and greens as long as they could. My experience bears that out. Few of the grouse I've killed have had a significant number of buds in their crops, although most were taken near aspen groves.

DALE C. SPARTAS

In the East, where the ruffed grouse is king, open-choked side-by-sides are traditional. Single-barrel guns work just fine, but hunters should leave their tight-choked duck guns at home.

which means that even if they don't depend on buds early in the season, they still want aspens in the neighborhood.

But enough about dinner. Let's talk dogs.

If you're really going to do this right, you have to have a bird dog. Aside from the wear and tear it will save your tired, aching body, dogs make hunting more fun, as well as more productive. My springer died years ago, and these days I hunt over a setter and a Brittany. As much as I love pointers, however, there's definitely a place for flushing dogs in this picture. Labs are duck dogs, not upland dogs, as far as I'm concerned, but if your Lab—all 300 pounds of him—will tear into a hawthorn patch to roust a grouse, my hat is off to him.

My late springer, Poke, bless his departed heart, wasn't always so enthusiastic. He knew where the birds were—he'd hunted them enough—but he'd be damned if he was going to dive into a thornbush unless he had to. He did have to, so we argued a lot.

On the other hand, my two little pointers, who are half Poke's size, are considerably less skittish about plowing through thorny cover, but they're also considerably less knowledgeable about grouse, which means I'm not getting nearly as many points these days as I would like. Still, it's tough to train a grouse dog in southwestern Montana, where birds are less common than in good midwestern cover, and coverts are likely to be far between.

As I said, once a ruff is in the air, it's a bona fide target, make no mistake about it. I once took a Massachusetts-bred friend into the hills north of Bridger Bowl and the two of us managed to drop two or three grouse in an afternoon, an excellent bag by my standards. He was thrilled—he wasn't getting out much in those days—but he seemed to think the Montana ruffs didn't fly quite as hard as the Massachusetts birds he'd grown up with.

I have my doubts. A flushed grouse is a flushed grouse, one I'm probably not going to hit no matter where it hails from. To date, my hits are so rare they stick in my memory.

One day, for instance, as I was walking down a logging road, my little Brit charged into the desiccated raspberries crowding the shoulder and slammed into a point. An instant later, a ruff roared up and over the head of a photographer friend who was along for the ride. I twisted around and quickly swung through the bird, slapping the trigger a second before it was lost from sight in a welter of aspen limbs. Probably because I was forced to shoot instinctively rather than deliberately, the bird folded, stone dead. My Brittany proudly marched back with the bird in her mouth, after which we spent 45 minutes snapping photographs, which is what outdoor photographers do.

On another day, a buddy's shorthair charged into a patch of hawthorns and out came two grouse, one behind the other. That pair became my one and only double, and I managed to connect only because the birds, for some inexplicable reason, had chosen to hunker down in cover a good hundred yards from anything they could put between themselves and my gun.

True, there are plenty of ruffs that flush to the nearest tree limb. Getting them off can be a chore. Usually, they'll flush if you toss something at them. Doing so with two people is no problem. One man throws, the other shoots. Doing so by yourself, on the other hand, is a big problem.

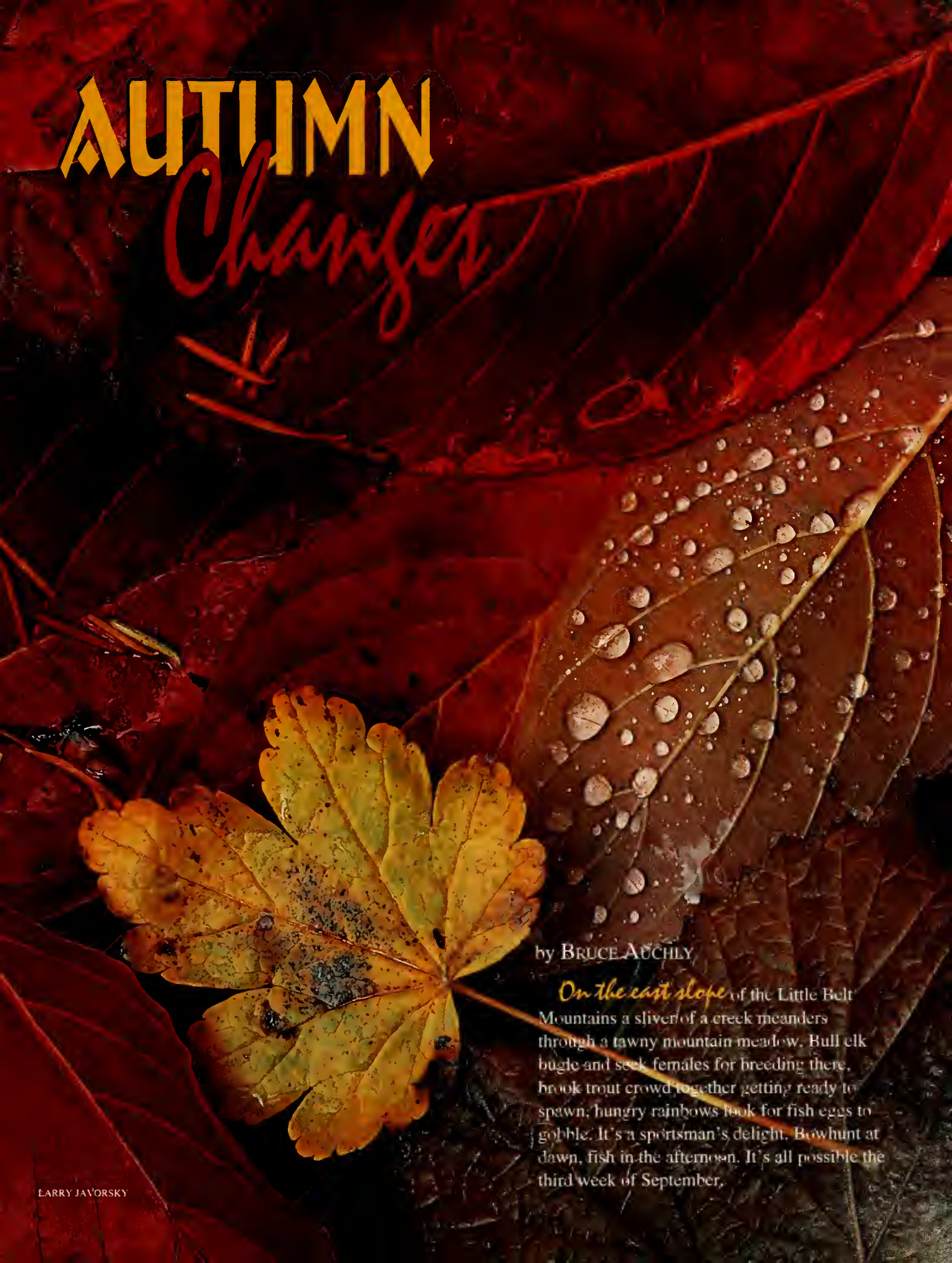
I've found it's just about impossible to throw, bring my gun to port arms while the stick is still in the air, and then immediately touch off a shot that is anywhere near where the bird is. Furthermore, grouse invariably drop a couple of feet before lining out in level flight. This last bit of information I give free of charge. It took me several years to figure it out, but it still didn't help my shooting. It probably won't help yours, either.

In any case, if you miss, or don't get off a shot, or don't get off a shot because the bird ducked behind a tree, or whatever, keep an eye on him. He'll probably fly 50 to 100 yards and be waiting on another limb.

Incidentally, grouse hunting in the West, like grouse hunting anywhere else, is no place for a rifle-bored duck gun. Side-by-sides are traditional, but not necessarily in Montana. Tight chokes are traditional in Montana but next to useless on a 20-yard shot. For years I've used a cylinder bored 20-gauge SKB double, and I'm currently in the process of restoring a Fox double, which, in case you were wondering, isn't cheap and therefore isn't gonna be a gun I hunt with anytime soon.

The point is, despite their sometimes inane behavior, Montana ruffs are still ruffed grouse, the king of gamebirds. At least some of them still flush like they're supposed to, hard and fast. So I keep at it. And every once in a while I hit one. ■

AUTUMN Chanter



by BRUCE AUCHLY

On the east slope of the Little Belt Mountains a sliver of a creek meanders through a tawny mountain meadow. Bull elk bugle and seek females for breeding there, brook trout crowd together getting ready to spawn, hungry rainbows look for fish eggs to gobble. It's a sportsman's delight. Bowhunt at dawn, fish in the afternoon. It's all possible the third week of September.

LARRY JAVORSKY

On Montana's prairies and even in the mountains where evergreens rule, the fall color change creeps along streambeds and coulees. Brook trout wear spawning colors, and short-day plants like asters bloom.

LARRY JAVORSKY

DENVER BRYAN

In the third week of September, days become shorter than nights. Elk and antelope breeding seasons peak. Aspen leaves hang golden before the fall.

In the third week of September, moose approach the apex of their rut. Bull trout are migrating to spawning tributaries. Asters bloom while western larch trees are still green.

In the third week of September, marmots and ground squirrels are already deep in winter's sleep. Bears continue to gorge themselves, taking in as much as 20,000 calories a day. Teal and snipe are winging their way to warmer climes.

Autumnal equinox. Death of summer.

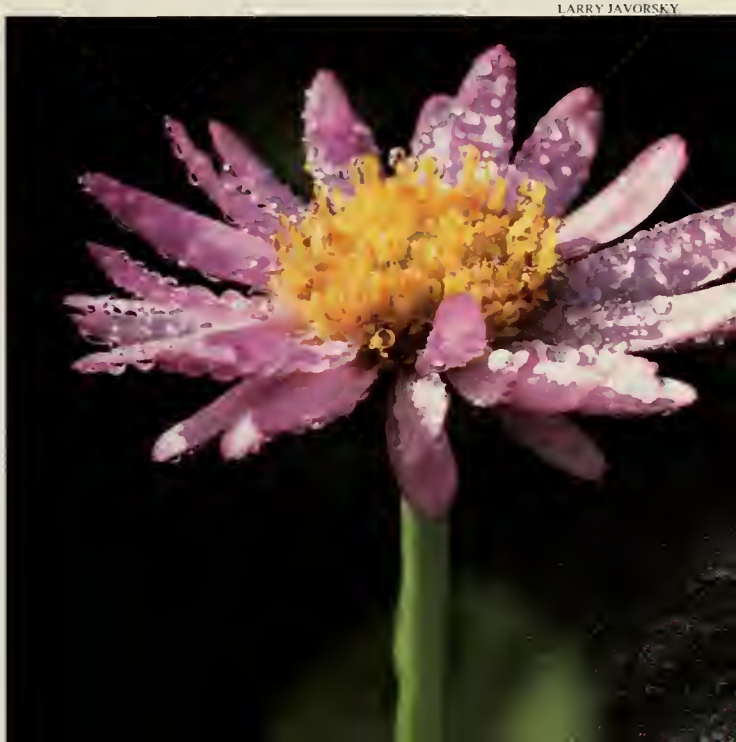
"Fall is like the coming of death," says Keith Shaw, a retired school teacher and botanist who lives in Fairfield. "Because there's only one thing left: winter. And we've treated winter like the enemy, and it's not."

Hunters and anglers, floaters and hikers, photographers and leaf watchers have long noted September's third seven-day cycle with varying degrees of delight and dread. But what lies at the root of those natural world changes we take for granted? What force urges on everything under the sun? Actually it *is* the sun, or rather, daylight length. Scientists call it photoperiod.

Because the earth tilts slightly on its axis, our planet's annual dash around the sun means daylight is longer than darkness north of the equator from the third week of March until the third week of September. Hence summer cookouts and higher winter electric bills. This seasonal shift touches everything on earth, from behavior to temperature, climate to reproduction, birth through death. Every school child learns this. Plants and animals inherently know it, too.

There are long-day plants and short-day plants, for example. The length of daylight determines when they bloom. "All of the asters are late bloomers, and they are short-day plants," Shaw says. No one really knows why asters evolved to bloom in September and, say, columbines in summer. "It works and that's all that has to happen," Shaw says.

LARRY JAVORSKY



ERWIN & PEGGY BAUER

Buck pronghorns spend much of September gathering harems and defending them against other males.

In the third week of September at Montana's latitude, leaf color presents the most visible effect of changing day length. The decrease in daylight triggers plants to stop producing chlorophyll, a chemical agent that turns leaves green. It also masks other colors; when the green disappears, yellows and reds shine on fall's arboreal palette. Temperature and precipitation come into play here, but day length is the driving force. "Leaves still change color even when it's warm," Shaw says.

Where deciduous trees are common, like upper New England and around the Great Lakes, the third week of September presents a riot of colors. On Montana's prairies and even in the mountains where evergreens rule, the fall color change creeps along streambeds and coulees.

Huckleberry patches and stands of fireweed are bright red, as are red-osier dogwood bushes. Cottonwoods and alpine larches are turning gold. Many of the berry-producing plants are full: currants, chokecherries, and buffaloberries.

Where grasses dominate, September makes little difference. On Montana's high plains, the above-ground growing season often ends by August. A brown sea has rolled on since the Fourth of July, or earlier, in drought years.

In the kingdom of animals, birds provide dramatic examples of the effects of photoperiodism. Birds respond to lengthening daylight in the spring by putting on a layer of fat

they will use for migration and breeding, says Harold Picton, retired professor of biology at Montana State University in Bozeman. About August, however, decreasing daylight triggers birds to start putting energy into migration again, but not reproduction.

"This is a neat physiological trick," Picton says. Not only do migratory birds start putting on a layer of fat for reserve strength when flying south, they manage to switch over their navigational system for the upcoming trip.

"They reinvent their map," Picton says. Birds like robins that depend chiefly on the earth's magnetic poles to orient their spring flight must learn to follow that impulse in reverse. Waterfowl that earlier hustled up a river system must master the same topography backwards. Other birds that navigated north by the stars now have to read their star charts essentially upside down.

For mammals, the third week of September presents a mixed bag. Some reach a peak of behavior, like the elk and antelope rut. Others are just beginning an activity, such as the moose rut. And a third group, represented by ground squirrels and bears, seem unaffected by the equinox. No matter the species, any activity observed the third week of September has been weeks, even months, in developing and is affected by the shortening day length. "Everything has to be in gear," Picton says. "It's a large process."

Hares start to change their color from brown to white in late August to early September. "That's accelerated after the period of equal dark and light," Picton says. "It gets striking in late October and November."

For hunters, especially archers, the third week of September means the peak of antelope and elk breeding. In his book, *American Pronghorn*, John Byers reports that a study on the National Bison Range at Moiese found 90 percent of female antelope in heat, or estrus, between September 12 and 25. As every dedicated antelope bowhunter knows, a buck pronghorn spends the third week of September breeding with the females he's gathered and defending his harem against other males. That's why one method of bowhunting involves putting up a decoy, usually a male antelope, and hiding behind it. The buck will approach the decoy, thinking he's going to put an intruder to flight. The creature's normal caution is overruled by an equinox-driven libido.

Elk bowhunters face similar challenges. Instead of a decoy, however, most archers will try to lure in a bull elk by imitating another bull's bugle as an invitation to fight, or using a cow call as a lusty enticement.

In the third week of September, moose are just approaching the peak of their breeding season, late September and early October. Which begs the question: If most big game species in Montana give birth near the first of June, why do some have their peak of breeding in September, while others, like mule and white-tailed deer, mountain goats, and bighorn sheep, have their rut in November and December? Because evolution has favored those species that adapted and survived, and an early June birth works best, Picton says. That means the time of breeding depends on length of pregnancy.

"For moose and elk, pregnancy is about nine months," Picton says. "It's very critical that their young be born about the first of June. If they aren't, survival isn't very good. Deer have about a six-month pregnancy. If they are born too early, they have a poor chance of survival."

For the later breeders, September daylength drives social activities like courtship, dominance battles, and marking territories.

Even underwater, daylight length reigns supreme. "All of the fish we deal with in Montana are affected in one way or another by photoperiod," says Al Zale, assistant unit leader at the Montana Cooperative Research Fishery Unit in Bozeman. That said, Zale admits it takes more than just daylight length to trigger fish behavior. "There are very few fish that respond to one single thing in nature."

For fish, there are at least three natural triggers: photoperiod, water temperature, and amount of discharge or water flow. All are interwoven and occur because of seasonal changes. As days grow shorter, for example, less sunlight is available to keep water warm.

Montana's aquatic world divides into autumn spawners and spring spawners. All warmwater fish spawn in the spring

TIM CHRISTIE

Archers try to lure in a bull elk by imitating another bull's bugle as an invitation to fight.

or early summer. Not all trout do. In the third week of September, five members of Montana's trout family are spawning or getting ready to: bull, brook, brown, and lake trout, and whitefish.

Fish that evolved as fall spawners probably did so because they found a consistency of water flow and lack of harsh environment, Zale says. Three of Montana's five fall spawners have been introduced from other parts of the country. The whitefish and bull trout are native. Found only west of the Continental Divide, the bull trout evolved where the winter is usually not as severe as on the plains and the streams typically don't freeze solid.

For spring spawners, the third week of September is a time to prepare for the coming winter. "They are putting on weight so they can enter the winter when their metabolic rate slows down," Zale says.

That can mean a bonanza for anglers. "Pike fishing picks up when the weather cools," Zale says. "Egg patterns work with rainbow trout because they are focusing on brook trout and whitefish eggs."

Young fish hatched in the spring have reached a critical phase by the autumn equinox. "It's a tricky time," Zale says. "They made it through the summer but the young fish that haven't fattened up enough will die. It seems to be a little easier for warmwater fish."

All fish tend to go to slower-moving, deeper water as fall turns into winter because their metabolism slows down and they are unable to maintain their position in faster water. Burbot seem to be the oddity, as they wake up from a summer slumber.

"In summer, it gets too warm for them," Zale says. "They just lay back and say 'I'm not going to exert myself.' They feel better in winter; they're happier."

Hunters, anglers, and outdoor enthusiasts usually are happier, too, when the third week of September appears.

"The thing that makes all these animals respond to photoperiod is a built-in biological clock," says Picton, the retired professor. We all have them. Even humans. Especially humans. "It makes it possible for us to measure the length of time and days."

In that high mountain valley, away from city lights and traffic jams, stars dance in the pre-dawn sky. It's easy to wake before dawn there, start the camp stove, try to bugle in a bull elk across the frosty meadow. Then, back at the campsite by noon, there's an afternoon ahead of trying to catch supper by flicking an elk hair caddis or a grasshopper in front of a brook or rainbow trout. Or maybe just a nap. ■

TIM CHRISTIE

Hunting on Horseback

Romance versus Reality

by ALAN CHARLES,
illustrations by DAVE MCGEE

I'm sure you've seen the pictures—Billy Bob Buckaroo trailing a packstring of matched mules, every third one packing at least a six-point elk rack. Or the typical camp scene, with wall tents stretched tight, campfire flickering softly, and a herd of horses grazing peacefully in the background. Or the snapshot of the hunter and his faithful horse, dude all decked out in a stylish duster and ten-gallon hat, horse standing steady as the hunter takes careful aim.

These images depict a real horseback hunt about as much as a Bullwinkle cartoon reflects a bull moose looming in the middle of a mountain trail. But come autumn, the hook-and-bullet press starts running the stories, and sure enough, the myth and romance of enjoyable horseback hunting is reborn.

The reality of horseback hunting stands in stark contrast to those warm and fuzzy pictures. In fact, the only way Billy Bob got elk racks on those mules is to have the mules heavily sedated, using elk racks made of fiberglass with no smell of real blood or real elk, and I'm betting that a moment after the shutter snapped the packstring blew up and headed over the ridge.

I'll also bet, if you look very closely at the camp scene photo, you'll find that several photos were actually spliced together. It's not really all that hard to find tent and campfire photos, but real fires in hunting camps are smoky, stubborn, and prone to go out. And a true picture of hunting camps and horses involves slipped hobbles, pulled picket pins, and hunters staring mournfully off into the distance or standing with ears tipped hopefully into the wind as they listen for a nonexistent bell mare. And nearly always, the air is very, very blue.

Hunter Bob and his faithful horse? Well, I'll admit, horses are faithful animals. The problem, though, is that they are generally most faithful to themselves. And about the time a rider piles off in excitement and starts grabbing his rifle from its fancy new leather scabbard, Old Faithful starts worrying about all the fuss and falls back. Even if he hasn't already seen some big, scary animal up ahead, his rider's behavior is usually enough to spook him, and most often he faithfully heads back to camp. With the rifle. And without his rider.

Now, don't get me wrong. I like hunting with horses. I've even had a hunt or two when some things actually went right. But more often, horseback hunts are simply adventures—sometimes riddled with terror, other times simply studies in patience and endurance.

Typically, the challenge begins at the corral, on the eve of the hunt. Horses that have been loaded on and off trailers all of their lives now balk at even the mere sight of a trailer. Of course, it's never due to the hunter's attitude or his effort to hurry up and get on the road. Nope, it's always the dumb horse's fault, and by the time the hunter is so mad he can't even spit, and the animal has been winched, butt-roped, or cranked in some fashion onto the trailer, it's nearly always too dark to find the broken wire that's making the brake lights flash whenever the truck is turned on.

A person can always pick out the hunters who have just survived the trauma of loading and leaving for a trip. They'll come roaring past on the highway, trucks belching smoke with the pedal stuck to the metal, hay bales and gear lashed like life jackets to the sides and top of the trailer, as a wild-eyed horse or two stares hopelessly out the window.

Next stop is the trailhead. Part of the myth is that a person simply saddles up and heads out. There is rarely any talk about stashing gear, watering and feeding the horses, figuring out picket lines or temporary corrals, matching horse personalities to horse habits, and second-guessing all the wrecks that can, and probably will, happen.

A typical horseback hunting camp involves one person who knows something about horses, one or more other hunters who got suckered into the deal and know absolutely nothing about horses, maybe one horse that has been ridden recently, and one or more other horses that are either borrowed, have lived all summer in a backyard, or are "green-broke," which is to say unbroke.

What happens at the trailhead usually sets the stage for the rest of the hunt. In the unlikely event that things go well—horses get settled, hunters mellow out and relax, gear gets sorted and packed—the sky brightens a bit.

More often, the crew hits the trailhead late, often after dark, rarely in a place where there aren't other horses and hunters nearby. The one fellow who knows something about horses starts barking orders and the other fellows kick in, trying to help. The horses catch on pretty quick that things are not real relaxed, and from there things go downhill.

It's usually not long before the first wreck. Maybe a horse falls back and breaks a lead rope. Or two unfamiliar horses get stuck together in a temporary corral and instinctive pecking order behavior turns violent. It might be something

as simple as one horse deciding that good manners call for a visit to the neighboring horses, or a horse spooking when someone lights a lantern.

My experience with trailhead camps is that no one, including the horses, ever gets any sleep. Case in point was a camp my brother and I put in late one night on the Buffalo Horn below Big Sky. We arrived with one familiar horse and a big, borrowed Appaloosa gelding, bucking heavy snow and plunging temperatures as we searched for an open spot among many other camps. We got the tent up, sort of, got a fire going in the stove, even got the horses watered, fed, and contained in a rope corral. We actually got a bite of warm stew, which sort of perked us up. All in all, it wasn't such a bad camp, and with morning holding promise of elk on the move, we turned out the lantern feeling pretty good.

It wasn't long before a muffled thump had my brother poking his head out of his sleeping bag. "You hear something?" he asked, but I was already fumbling for my boots. Peering out the tent flap, I could barely make out the black spots on old Appy's rump as he headed down the road. For the next couple of hours, dressed in longjohns, heavy coats, and unlaced boots, my brother and I tried to capture our socializing horses as they visited all the neighbors. In the process, of course, we woke up all the other hunters in camp—but hey, like I said, no one ever gets any sleep in a horse camp.

Equipment dealers and catalog salespeople really like hunters who use horses. After all, having the necessary gear is part of the experience. Of course, the best place to try out all that new equipment is at the trailhead...in the dark...when hunters are eager to be hunting...and horses are not. It's absolutely amazing just how many gadgets can get knotted onto the sides and backs and even the bellies of horses and mules by buckaroo neophytes.

Mule...did I say mule? So far, I guess we've mainly been talking about horses. But mules—they offer a totally new and different twist to this business of hunting with equines.

Now, let me say first of all, I know how tough, sure-footed, intelligent, and dependable mules can be. I've admired some very fine, long-eared, well-behaved mules. That said, I've often seen the other side of these creatures. And believe me, it ain't pretty.

A classic hunt with mules is etched somewhere in the memories of several hunters who once made an elk hunt in the Madison River country south of Ennis. Three hunters showed up at a trailhead late one night. They had with them two horses and two mules. The first night things went pretty smooth, though come morning, one horse was loose and had to be caught.

First day, the hunters took off scouting, one rider on a horse heading up one trail, the other two fellows taking a mule and horse and heading down another trail. Come nightfall, the two fellows were back lounging around camp while the single fellow horseback was riding down the trail behind some other riders from Billings.

Just above camp, one rider dismounted to open a gate. Although in the dark no one actually saw it happen, apparently one of the Billings horses kicked at the horse behind and instead connected with the rider's shin. The kicked-at horse bucked our rider high into the air, and then bucked again, catching him just under the eye with the butt of the scabbarded rifle. Eventually he determined his leg wasn't broken, and with assistance got hoisted back into the saddle and rode on into camp.

The next morning, gimped up and sporting a rather impressive shiner, our hunter and his partners strapped gear onto mules and horses and headed into the backcountry. Things went well for at least 200 yards. Then the young greenbroke mule acted up. Not much, just a little hopping, snorting, and settling of the gear.

Another couple hundred yards, and the same thing hap-

pened. It took at least a half a mile before the young mule actually decided he'd had enough. Off he went through the downed timber, pans a'rattling and packs a'sliding until he ended up standing defiantly in the middle of the creek.

That's when an outfitter and his party of hunters rode by. Every one of the outfitter's mules was perfectly matched, manties and top packs tied square, and the dudes all looked like Hollywood cowboys. They simply nodded as they rode past, but their snickers drifted back on the wind long after they were out of sight.

The anticipated two-hour trip to the campsite lasted a wee bit longer than expected, but it wasn't really much after dark before hunters, horses, and mules were settled in camp. Late the next evening, one of the hunters killed a big bull elk. It took another day to get two hunters and two mules even close to the elk—actually, they spent a miserable night huddled in a thicket high above the elk, perched on wet saddlepads beside a tiny fire, the mules tied tight close beside them as the wind howled, the snow blew, and the temperature plummeted.

An epilogue to this tale occurred two days later, as the crew was heading back toward the trailhead. Near where the outfitter and his string had passed them on the way in, they had to step off to the side as the same outfitter and his clients passed them on the way out. His mules were still matched, and packed just so, but the panniers were mostly empty, topped only with a forlorn little rack from a raghorn bull.

The dudes rode past our hunters, staring at the yellow shiner on the one fellow, the huge elk rack tied like a Christmas tree to the top of the young mule's pack, and the hollow-eyed look on the third hunter's face—a hunter who had never spent much time around horses, and was on his first and mostly likely last horseback hunt. They rode past in silence, simply staring, and this time, no snickers drifted back on the wind.

So that's the truth of the matter when it comes to hunting with horses. There are those cameo shots, the ones you see on the magazine covers come fall, where all is serene and picture-perfect. And then there is reality, where horse camps are adventures and life is simply a daily struggle to survive.

One of my favorite photos is a picture taken in 1885 of Teddy Roosevelt standing beside a stocky black horse. T.R. is grinning that big toothy grin of his, peering at the photographer through bottle-bottom glasses, and the quote underneath says, "The joy of living is his who has the heart to demand it."

That sums it up. That's why hunters take horses to the hunting camp. It's to have adventure, to capture a moment, to build a memory.

That's not the same as having fun, or even having everything go right. And with horses or mules the one thing you can count on is that things probably won't go quite the way you expect them to. But then, who really cares? ■

Keeping the Faith

by JOHN FRALEY and JIM POOL

THOUSANDS OF YEARS before the advent of written language, humans hunted and made war with the bow and arrow. Ancient cave art shows that the bow was vital to our success as a species.

Native Americans became masters in making bows and bowhunting. But after firearms were introduced, the bow lost importance in many areas.

The last century in our country has seen a resurgence in the popularity of archery as hunters search for ways to avoid crowds and more closely experience nature. Many consider bowhunting an art form with its high skill requirement and almost Zen-like qualities of stalking and interacting with game.

MANY CONSIDER BOWHUNTING AN ART FORM

ZEN-LIKE QUALITIES OF STALKIN

Accompanying the growth of bowhunting has been an increased desire on the part of bowhunters to follow the best ethical practices. The first bowhunter education courses were organized in 1960 by the late Bill Wadsworth, who was instrumental in forming the National Bowhunter Education Foundation. States across the country soon began offering bowhunter education courses for young hunters.

One of the first bowhunter education instructors in Montana was Larry Whitmyer, who has taught the bowhunter education course in the Billings area for 16 years. Whitmyer was tutored by the best; he took the course from Bill Wadsworth when Wadsworth came to Billings more than 20 years ago. "I'll never forget that course," says Whitmyer. "He used a lot of humor and emphasized hands-on learning. I use the things I learned from him in every class I teach."

During the 1980s, the Montana Bowhunters Association (MBA), with help from pioneering instructors like Larry Whitmyer, established courses across Montana. In 1987, the Montana Legislature amended the hunter education law at the request of the MBA to require bowhunters 12 to 17 years of age to complete the National Bowhunter Education Foundation course in addition to the conventional firearm hunter education course. With the law's passage, the bowhunter education program became part of the overall Hunter Education Program administered by Montana Fish, Wildlife & Parks (FWP). In 1991, again at the urging of MBA, the legislature amended the law to require first-time bowhunters of any age to complete the bowhunter education course.

The Montana Bowhunter Education Course includes safety information similar to that found in the hunter education course. It addresses archery equipment, each individual's physical limitations, and the bowhunter's personal responsibilities. Students take part in a minimum of 12 hours of classroom and field instruction.

JOHN FRALEY

FWP's goals in the program are to provide basic training in the safe handling of bowhunting tackle, to develop responsible and knowledgeable bowhunters, and to reduce the number of unrecovered animals. About 500 professionally trained bowhunter education instructors now certify 2,700 students each year in Montana. Nearly 20,000 students have been certified since the program's inception.

VOLUNTEER INSTRUCTORS ROGER AND PAT ALLICK, a Kalispell couple, have been mainstays in northwestern Montana bowhunter education for a dozen years. "Both Roger and I were interested in bowhunting," says Pat. "Roger started first, because we could only afford one set of equipment. After we had bowhunted for awhile, we both recognized the need for education."

Pat and Roger got involved in the early bowhunter education course organized by members of the MBA. In 1987, FWP and the MBA incorporated the course into the state's overall Hunter Education Program. "It was a good program," says Roger, "but with input from other archers, bowhunters, and instructors, the course has really progressed and taken hold. Because of its excellent track record, a lot of folks who may not be bowhunters take the course just to learn what bowhunting is all about. That speaks highly of the success of the program."

The Allicks, like most instructors, point to responsibility and ethics as the most important part of the course. This responsibility begins with pre-course preparation—students are now required to read the manual and other materials

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AND INTERACTING WITH GAME.

before the first night of class. "We teach responsibility with every part of the course," says Roger. "Getting people into thinking about what they should and shouldn't do is important. Each bowhunter must realize that he or she represents all bowhunters in the minds of the public. Individual actions affect the entire bowhunting community."

Pat and Roger list similar motivations for their participation in bowhunting and bowhunter education. "It's all about experiencing nature," says Roger. "It extends hunting opportunities and presents an additional challenge. Because of bowhunting's nature, you must slow down and learn about the animal and the environment. It makes me appreciate the outdoors more."

Pat refers to the mystique of bowhunting as a big motivator. "You have to develop a high level of marksmanship and skill and apply the extra strategy and effort to get very close to the animal," she says.

The Allicks teach bowhunter education to be together, and to share in the satisfaction of making a difference in the lives of their students. Says Pat: "Ten years in the public school system has shown me that the best way to teach is to involve the student. We emphasize involvement in every way—in discussions, demonstrations, and field exercises. It's a pleasure to work with the students in bowhunter education. They have a high level of interest and they're always ready with questions."

Roger points out that "spousal" team teaching is especially gratifying. "I really enjoy teaching with my wife. We sound off each other, we balance each other nicely." Pat adds that she and Roger often teach separate sections in the course, then team up to teach portions of the material on field day and test night. They agree that they learn something new from each course they teach.

When asked about highlights of their 12 years of teaching together, the Allicks begin listing experiences with their students. "We met one little guy who wanted to take the course, but his mother didn't have a car," remembers Pat. "Roger and I picked him up at his home and dropped him off after class each night. We found out that each afternoon before class he and his mother would sit down and go over the course material. We felt good about helping him out and offering something that he could share with his mother." Pat also mentions a deaf student in their class this past spring. "He really challenged us. He asked us detailed questions about the material—he brought tons of note cards he'd made from each chapter of the handbook." The Allicks arranged for a signer to be at each class session. After the course, the signer, a non-hunter, became a booster for the course. Instructors have worked hard to make the course open to everyone, and it has paid big dividends.

"When we see students around town, they always want to tell us about their hunting experiences, and how the course helped them," says Pat. "I can tell right away if the student was from my school class or the bowhunter education class depending on whether they call me 'Pat' or 'Mrs. Allick.' Being remembered by so many students over the years shows us that we're making a difference."

Roger's desire to make a difference and to give something back to bowhunting are the reasons he has put so much into bowhunter education. "I

PHOTO COURTESY OF MEL & CHERRIE KIENINGER

Roger and Pat Allick (opposite page) and Mel and Cherrie Kieninger (above, in camouflage vests) are among 500 professionally trained bowhunter education instructors who certify 2,700 students each year in Montana.

hope that by sharing this information it will be shared many times over with other folks," he says. "This makes a more responsible group of bowhunters. Some of that may be wishful thinking, but it's my hope. I cherish the opportunity to bowhunt and I don't want to lose it."

A 12-YEAR VETERAN of the bowhunter education program, Mel Kieninger has, over the past two years, teamed up with his wife, Cherrie, to teach the course in the Havre area. When Mel started, the state course was in its infancy; he has seen improvements in instructor training, student materials, and teaching aids.

"After the course became mandatory for all first-time bowhunters, the class makeup really changed," says Mel. "Before, the class was made up of youngsters, mostly. Now 75 to 80 percent of the students are adults."

He points out that the requirement initially met with some resistance. For example, a person may have hunted 10 years in another state but if he did not have an archery hunting stamp or a bowhunter education certification, he is required to take the course. "It's most satisfying when students who take the course grudgingly turn out to be very supportive after they see what the course involves."

Cherrie, an educator by profession, believes that team teaching is the most powerful way to bring out the best of both instructors. "One of the advantages of teaching with your husband is that you have continual opportunities to discuss teaching methods and plan activities for the course," she says.

The availability of dynamic training aids is one of the big advantages in teaching the course, Cherrie believes. She lists the Hunter Education Shooting Center (a computer-video training center based in a trailer), life-sized 3-D deer targets with vital organs exposed on the opposite side, and various Project WILD activities as key training aids.

To illustrate the dangers of hypothermia, Cherrie uses a unique class exercise involving an aquarium and ice water. She places 200 pennies in the bottom of the aquarium and asks for volunteers to come forward and remove the pennies one at a time. "The most anyone was able to remove was 82 of the pennies before their hand was so cold that it couldn't operate. It really opens the student's eyes about underestimating hypothermia."

Mel places great importance on

Montana's Bowhunter Education Field Course

Students consistently point to the field portion of the bowhunter education course as the thing they like best. The field course offers students a hands-on opportunity to study game retrieval, tree stand techniques, bow shooting, and arrow placement. Typical components include:

Blood trailing: Perhaps the most important part of bowhunting is being able to track the animal after taking the shot. Blood trailing on dry ground is more difficult than most people think, and experience helps greatly. Instructors set up a blood trail using glycerin and food coloring, then lead students through trailing techniques.

Vital area placement: Students learn how to properly place shots using life-sized targets, vital organ transparencies, and 3-D targets with the vital organs exposed on the opposite side.

Tree stand techniques: Instructors set up various types of tree stands and demonstrate how to get into and out of them safely. Students practice from the stands if they wish.

Shooting practice and techniques: Many instructors set up a short 3-D target course in which students take shots from different angles using their own equipment or equipment provided by instructors.

JOHN FRALEY

Whitefish instructor Ronny Nail explains tree stand techniques.

Judging distance: This can be part of shooting practice or conducted separately. Because of arrow trajectory, hitting a vital organ depends on accurately estimating distance to the target.

Outdoor survival: In some courses, outdoor survival techniques are discussed and demonstrated.

DONALD M. JONES

Respect for the land and for wildlife are integral parts of Montana's Bowhunter Education Program.

instilling good hunter behavior practices in their students. He says that hunter behavior and ethics are similar terms but with an important shade of difference. "I believe bowhunters are judged by all of their actions," he says. "People look at how they deal with everything, not just when they are afield hunting."

Respect for the land and the wildlife being hunted are things Cherrie hopes students take away from bowhunter education classes. She emphasizes respect for landowners as key in maintaining a good image for bowhunters.

Both Mel and Cherrie try to convince students that they carry a tremendous responsibility into the field. "It's a heritage and tradition that has been with us for so long," says Mel. "Students need to see that they have a great responsibility on their shoulders—to do things right so we can carry on this tradition to the next generation."

Mel credits Cherrie's teaching expertise and perspective in improving their presentation to women who take the course. Says Cherrie: "There is a big difference in learning styles of men and women. A man will often take something, such as a bow, and begin practicing with it right away. A woman, on the other hand, will want to know everything about it before using it. Recognizing these differences is important if you want to teach everyone effectively."

Mel got involved in bowhunter education because he didn't want to learn through trial and error. Once he saw the value of the course and the dedication of the volunteer instructors, he was hooked. Cherrie joined the program because of her zeal for teaching and her desire to share the experience with Mel. The experience has enriched both of their lives.

"One of the most satisfying experiences I can recall is teaching a sightless person how to shoot a bow," says Mel, describing a student he had in another archery course. "The goal was to pop a balloon on the target. He shot all around that balloon and didn't hit it, but never gave up. Finally he popped the balloon and everyone in the area knew it. If the desire and determination are there, anyone can do it."

Cherrie singles out a grandmother she taught to shoot at a "Becoming an Outdoors Woman" workshop. "She couldn't draw a compound bow but we found her a recurve she could pull back and shoot," recalls Cherrie. "She hit the target, turned to me and said, 'Now I know what I want for Christmas!'"

Both Mel and Cherrie serve as instructor trainers in the statewide bowhunter education training program. "We feel privileged to teach bowhunter education in the community and provide training to other instructors on a statewide basis; we feel we can really make a difference that way," says Cherrie.

"It's been a great experience," concludes Mel. "It's hard to single out high points because there have been so many."

THE SUCCESS OF MONTANA'S Bowhunter Education Program is a great example of personal responsibility. Bowhunters asked for the program and they design and teach the material. Also, the MBA imposed an increase in the archery license fee of $1. Through this fee and federal excise taxes, Montana's 26,000 bowhunters finance their own education program.

Instructors recognize that poor hunter behavior will jeopardize bowhunting opportunities for everyone. That's why "hunter education rather than regulation" is such an important concept. Says Clark Riesland, bowhunter education chief instructor for Custer County: "I teach bowhunter education for many reasons. But when I see a student really understand the responsibility of being a good bowhunter—when that light comes on—that's really exciting." ■

Dr. Richard Goss, a leading authority on deer headgear, has this to say about antlers and horns: They are "an extravagance of nature rivaled only by such biological luxuries as flowers, butterfly wings, and peacock tails." Goss believes antlers and horns are so improbable "that if they had not evolved in the first place, they would never have been conceived even in the wildest fantasies of the most imaginative biologist."

Antlers are pretty fantastic when you think about them. Imagine carrying branches of dead bone around on your head as male status symbols. Think about sprouting those things at the rate of half an inch a day! Try, as moose do, carrying 70 pounds of self-aggrandizement on your head and steering those ungainly outriggers through the trees on the run.

Horns are nothing short of amazing, too. Consider the bighorn sheep with its double-layered skull shored up with struts of bone to act as underpinnings for those big "curls" and for bashing them into a rival's horny head. And then there's the pronghorn with its triple-layered horns, hand-me-downs from spiral-horned ancestors that lived in the Eocene Epoch.

Animals antlered and animals horned—deer, elk, moose, mountain goats, bighorn sheep, pronghorns, bison—include some of Montana's most watchable wildlife and some of our most prized game animals.

But what purposes do their unlikely head ornaments serve? How do they grow? Why do antlers fall off annually and horns stay on for a lifetime? What accounts for their different sizes and shapes?

Antlers and horns are more than decorations for the animals that sport them. They are visual symbols of a male's health, foraging ability, and social rank. He uses them in ritualistic sparring matches and in occasionally fatal dominance fights. And, yes, in a few species, females grow antlers, and in many species they grow horns.

Wildlife researcher Valerius Geist calls horns and antlers luxury organs. "The better an animal is at getting the most nutritious food, the more it can spare from pure body needs. The excess can be put into luxuries, into status—as big horns (or antlers). Thus horns (and antlers) become symbols of prowess and ability. They say that physiologically this is indeed a very capable animal and a very good forager."

Horns and antlers send these messages to other males and females, giving males a chance to size up their competition and females an opportunity to choose a mate who will help them produce healthy, vigorous offspring.

It is in the best interest of males to let the mere sight of their antlers or horns show what hot stuff they are. If they can convince other males and interested females of their superior merits by simply displaying their headpieces, instead of using them for sparring or fighting, they can conserve energy and avoid the possibility of being injured or killed in combat.

So, males do a lot of strutting their stuff. Two competing mule deer or whitetail bucks, for example, will often circle one another before the onset of rut and tilt their antlers this way and that, attempting to establish their social rank by showing each other how glorious their antlers are. Bull elk, on the other hand, can best show off the long beams of their antlers by presenting a side view. So, competitors display their headgear by parading parallel to one another and

RICHARD MEUSEL

Antlers and Horns

by Sam Curtis

nodding their heads so the tips of their antlers move in impressive arcs. A pronghorn buck attempts to emphasize the size of his horns by lowering his ears and tilting his head slightly forward when meeting another buck.

Mule deer bucks not only show off their antlers, they sound off their antlers, too. "Horning"—violently thrashing vegetation with his antlers—is one way a mule deer buck can call attention to himself. The sound of one buck horning often elicits horning from a rival, and the two deer use the sound to locate one another and show off their noisemakers.

The horning of a bull elk sometimes results in a collection of grass and twigs getting stuck in his antlers. The added vegetation makes his antlers look bigger than they really are and makes for a more convincing display of his superiority to other males and prospective mates.

But horn and antler displays do not always settle the issue of social rank, especially among males who are fairly equally endowed. Closely matched bull elk, for example, perform sparring matches to clarify who is the dominant male. They spar using closely followed rules of engagement that involve much head bobbing and nodding, slow antler engagement, and a lot of pushing and shoving. The subordinate bull eventually ends the sparring match by backing away from the dominant bull. It is all very dignified, really, a ritual, a contest with agreed-upon rules, not a fight at all.

For grand prize winners, when it comes to sheer spectacle in sparring matches, bighorn sheep take the cake. They back off and bang their great horns into one another at speeds of up to 20 miles an hour. The force of the impact can lift their feet off the ground, and the sound of their horns cracking together echoes through the hills.

After each blow, opponents pause to display their horns, giving one another a chance to equate the force of the impact with the size of the weapon. "We can infer," says Valerius Geist, "that the rams are thus conditioning each other to associate a given combat potential with a specific horn size."

Amazingly, serious injuries rarely result from these showy sparring matches, which have been known to last, non-stop, for over 24 hours, averaging five collisions an hour. The sheep's double-layered, reinforced skull linked to its

spine with heavy-duty tendons absorbs crashes that might loosen the brain or break the neck of other animals.

Full-blown, no-holds-barred dominance fights occasionally do occur among horned and antlered animals. Deer and elk sometimes hook and thrust the points of their antlers into their opponent's throat, chest, or belly, where, says Dr. Goss, "a punctured lung or herniated intestine will seal the fate of the victim."

In studies of one mule deer herd it was estimated that over 10 percent of all adult males had received injuries inflicted by the antlers of other males, with puncture wounds and broken ribs the most common injuries. Some deer and elk become permanently lame as a result of dominance fights, and therefore are more susceptible to attacks by predators.

Interestingly, mountain goats, the creatures with horns of the most deadly design, are also the most reluctant to fight. The reluctance makes sense, according to Valerius Geist. "The moment his weapons pierce the opponent and send jarring pain throughout his body, the (mountain goat) aggressor is subject to instantaneous and very damaging retaliation. By the time the fight is over, the victorious aggressor is hardly in better shape than the vanquished and is just as certain to sicken and lose out in breeding."

Sex, after all, is at the root of antlers and horns worn by males. The timing of male antler growth and loss suggests as much. But what purposes are served by the antlers worn by female reindeer and caribou and the horns grown by female bighorn sheep, mountain goats, pronghorns, and bison?

Valerius Geist offers some explanation: "Among ungulates that live together in large herds, females often look like males—so much so that even seasoned biologists may be fooled. One theory is that since the female must compete for forage at times against young males, she assumes their image. Another reason the female may have evolved horns is to discourage courting and harassing advances by young males, which tend to stay with the females after the rutting season."

Whether worn by males or females, antlers and horns are quite different in their makeup and growth. Antlers are actually bones that grow from platforms, called pedicels, located on the skull. Covered with velvet—a variation of the regular skin on the animal's head—the growing antlers have blood vessels and nerves just like other parts of the body. Researchers speculate that nerves in the velvet allow animals to estimate the size and shape of their antlers by rubbing them against objects such as bushes and trees.

When antlers have finished their annual growth (they may sprout from a third to a half an inch a day on some healthy mule deer and whitetails), the antler bone hardens and dies. The velvet dries out, and the male deer, moose, or elk rubs it off on shrubs and saplings in the fall so he has a shiny new set of antlers to display just in time for the breeding season.

The cyclical timing of antler growth and antler shedding is a response by the animal's hormonal system to changing periods of daylight. Between March and May a hormone secreted by the pituitary gland starts the growth process. But as fall begins, increasing levels of testosterone stop antler growth and cause antlers to harden. After the rut, testosterone levels drop, causing the bone at the base of the antler to weaken and the antlers to fall off.

Because this pattern depends on varying lengths of daylight, the typical starting dates for antler growth change

TOM J. ULRICH

DONALD M. JONES

Bighorn rams (left) have double-layered, reinforced skulls to absorb the shock of violent horn-banging contests. Unlike the horns of sheep, the antlers of deer and elk are shed in winter and regrown again in spring. The newly sprouted antlers of this whitetail buck are sheathed in "velvet" (actually skin covered with fine hairs) that contains blood vessels and nerves.

with the latitude. In addition, the age, health, and genetic makeup of each deer will influence antler shedding dates of individuals in the same geographical location. For example, mule deer in one monitored area shed antlers over a period of 114 days one year. Although both antlers of an individual animal often fall off within minutes or hours of one another, one may stay in place for several weeks after the other has come off.

The size of and number of points on deer and elk antlers are determined by diet and age, yet it is not possible to tell how old an animal is by counting the points on its antlers. For example, whitetail bucks in healthy, uncrowded habitats often produce two- and three-point racks at 1.5 years of age. Deer of the same age in unhealthy, crowded habitats in the same region may produce only spikes less than three inches long.

Unlike antlers, horns are not shed annually (except in the case of the pronghorn, which sheds its horn sheath every year), and horns are not made of bone but of layers of hardened epidermal cells. As Dr. Goss explains it: "Antlers grow at their tips, like the branches of trees. Horns elongate like grass, growing from the base. The bony horn core is enveloped in a layer of skin, the epidermis of which differentiates into an outer (horny) sheath."

Each year another cone-shaped sheath grows inside the sheath from the year before, pushing the older sheath out and, in the case of bighorn sheep, creating annual horn rings that reveal the animal's age.

Perhaps because individual survival comes before herd or species survival, nutrition goes first into body growth and only after that requirement has been fulfilled does it contribute greatly to antler or horn growth. So, any animal getting a diet lacking in protein, minerals, and vitamins during periods of antler growth may end up with pretty spindly headgear.

Given a good diet and a good genetic history, however, a whitetail buck may produce a trophy rack between 4.5 and 8.5 years of age. Elk, on the other hand, may have to go through 10 or 11 sets of antlers before they produce their biggest set. After a deer, elk, or moose has passed its prime, its antlers do not grow as large.

Atypical antlers—racks that may be lopsided, twisted, clubbed, or webbed—are caused by a number of factors. Genetic background may produce the same strange set of antlers year after year. Problems with calcium metabolism can cause corkscrew-shaped racks, and "cactus" antlers may result from bone tumors. A deer or elk that is accidentally castrated may retain antlers that don't lose their velvet or fall off. Injury to an antler pedicel or a growing antler can also cause bent or misshapen antler points.

Whether graceful or grotesque, antlers and horns have always been prized by man. American Indians used deer and elk antlers to make spears and knives. They made antler wedges and chisels along with digging tools, fleshers, hide scrapers, and handles for cutlery and other implements.

Antlers and horns also had medicinal and spiritual values for Native Americans. They were carried as sacred objects in medicine bundles, and were used to treat a number of ailments. Powdered moose antler, for example, was prescribed for epilepsy, headaches, and snake bite.

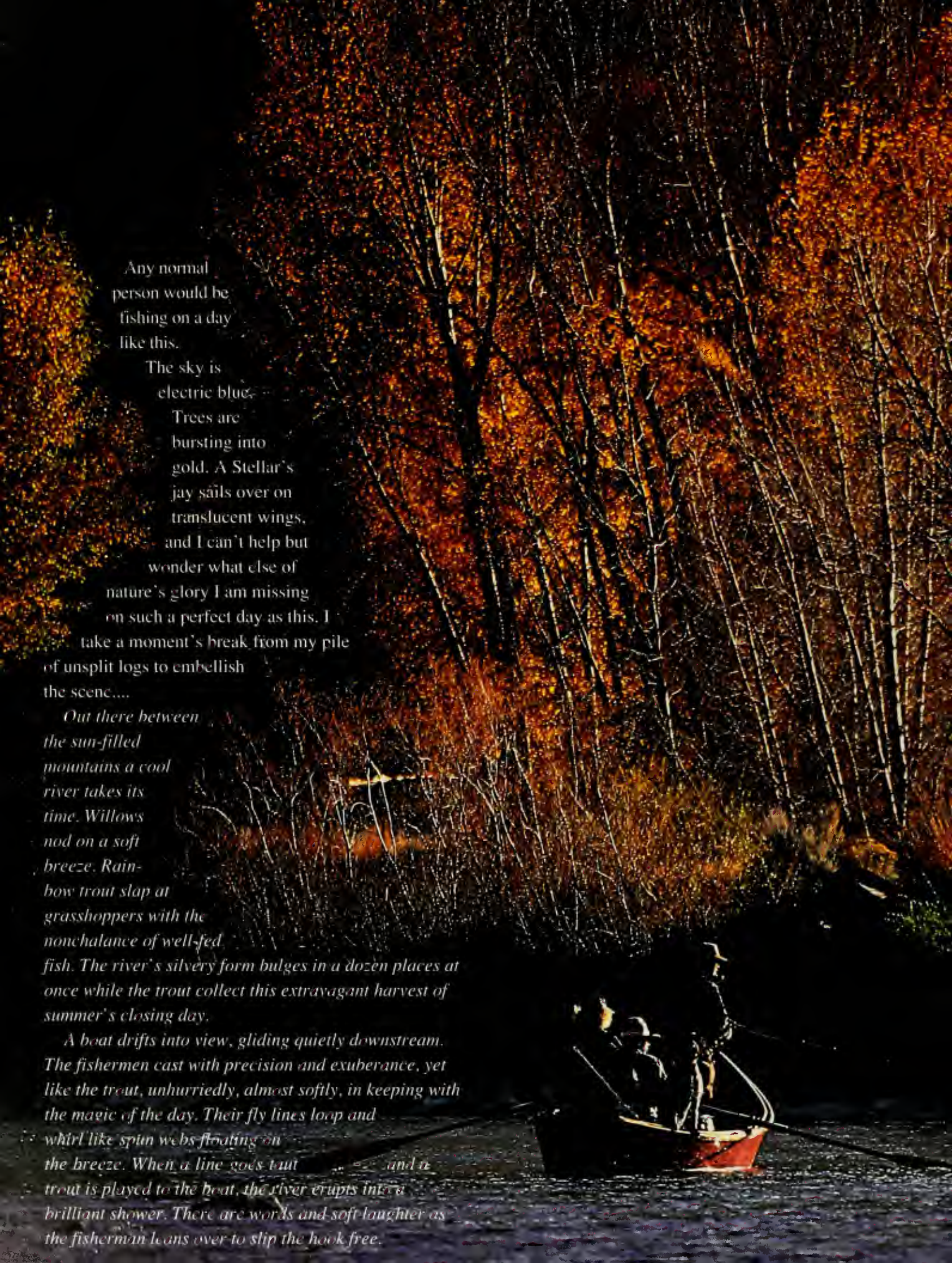
According to Dr. Goss, "The use of horns and antlers for medicinal purposes dates back to antiquity. The ancient Egyptians left records prescribing hartshorn, applied as an ointment, inhaled after burning or fumigation, or used as a powder with which to brush the teeth. However, it is in the Orient that the ancient tradition of folk medicine, based on the use of innumerable herbs prescribed in complex and arcane ways, have persisted to the present day."

This continued belief in the efficacy of antlers and horns for ailments as far ranging as ulcers, anemia, rheumatism, and sexual disorders has kept deer farmers in business in New Zealand and horn hunters busy in Montana. Unfortunately, the high value of horns in velvet has also spurred poachers to kill deer and elk out of season just for their antlers.

Our ongoing fascination with antlers and horns is clear in the way we continue to use and show them today. We make them into buttons, door knobs, and chandeliers. We sport them on belt buckles and knife handles. Most of all, we hang them on the walls of our barns or our homes as displays of our own prowess. ■

ERWIN & PEGGY BAUER

With antlers fully hardened in late summer, bull elk remove the velvet by rubbing them vigorously against trees and brush.



Any normal person would be fishing on a day like this.

The sky is electric blue. Trees are bursting into gold. A Stellar's jay sails over on translucent wings, and I can't help but wonder what else of nature's glory I am missing on such a perfect day as this. I take a moment's break from my pile of unsplit logs to embellish the scene....

Out there between the sun-filled mountains a cool river takes its time. Willows nod on a soft breeze. Rainbow trout slap at grasshoppers with the nonchalance of well-fed fish. The river's silvery form bulges in a dozen places at once while the trout collect this extravagant harvest of summer's closing day.

A boat drifts into view, gliding quietly downstream. The fishermen cast with precision and exuberance, yet like the trout, unhurriedly, almost softly, in keeping with the magic of the day. Their fly lines loop and whirl like spun webs floating on the breeze. When a line goes taut and a trout is played to the boat, the river erupts into a brilliant shower. There are words and soft laughter as the fisherman leans over to slip the hook free.

A River Dream

by Leo Keane

The river is wide awake today after a long, sleepy summer, and the boat and fishermen are in the middle of it all...a flurry of bugs, luminescent willows, wild mint flavoring the air. And bird life. It's always birds that bring the river to life.

A flock of teal explode in glistening spray, blue wings catching the sun, as the boat drifts past a green backwater. Peet-weets pipe from gravel bars and a heron's croak echoes up the river bank....

Ah, but it is not the startling croak of a heron that snaps me back to reality. That's Skippy, our bossy pine squirrel, barking at me from atop the woodshed.

You don't have to tell me, Skippy. Back to work. Tomorrow is the first day of fall, and much as I love my chores around the homestead, I'll be loading up the boat to find that river. I'll be the fisherman releasing trout, watching birds...and thanking God for this wonderful time of year. ■

DALE TASH: A SPORTSMAN'S ADVOCATE

MIKE GURNETT

Dale Tash

Montana Fish, Wildlife & Parks Commissioner Dale Tash died on June 25 at his home in Dillon. Tash, 72, was remembered by Governor Marc Racicot as a "tireless advocate of sportsmen's interests" and "an ardent supporter of the need to preserve Montana's natural and cultural heritage for future generations of Montanans."

A retired Dean of Academics and Professor of History at Western Montana College in Dillon, Tash was appointed in April 1995 to represent the interests of southwestern Montanans on the five-member commission. After his retirement from Western Montana College, Tash remained in Dillon and served for many years as manager of historic Bannack State Park for Montana Fish, Wildlife & Parks (FWP). An active member of the Dillon community, Tash was an avid, lifelong sportsman.

As a member of the FWP Commission, Tash was a staunch advocate for public hunting access and was instrumental in the 1997 agreement to secure access for anglers to the Ruby River south of Twin Bridges. Tash also played a pivotal role in enacting more stringent deer hunting regulations in 1997 and again in 1998 to conserve mule deer populations in southwestern Montana.

The Governor noted that Tash's work with FWP and his commitment to Montana's wild, recreational, and cultural resources began well before his tenure on the FWP Commission. "It was in the latter capacity, however, that we all came to realize just how enormously committed Dale was to the resources Fish, Wildlife & Parks manages for all Montanans."

FWP Commission Chairman Stan Meyer lauded Tash for the outstanding job he did in finding middle ground between southwestern Montana sportsmen and landowners. "He seemed to have the friendship and confidence of both sides. He truly represented the public very well."

MEMORIAL FUND ESTABLISHED FOR COMMISSIONER TASH

Montana Fish, Wildlife & Parks has established a memorial fund in the name of the late Dale Tash that will be dedicated to preservation and restoration of Bannack State Park, Montana's first territorial capital southwest of Dillon. For many years, Dale managed the historic state park for FWP. His father was born in Bannack in a house that is one of a number owned and cared for by the State.

FWP Director Patrick Graham announced the creation of the fund at a memorial service for Tash on June 30 at Western Montana College of the University of Montana at Dillon.

In conjunction with creation of the fund, Graham said, the FWP Commission will designate the last Sunday in June of each year as Dale Tash Day at Bannack and waive entrance fees to the popular state park for the day. If visitors to the park that day choose to make a donation, it will be deposited in the fund.

Persons wishing to make contributions to the restoration fund now or any time in the future should send them to Cindy Staszak, manager of Bannack State Park, 4200 Bannack Road, Dillon MT 59725; or phone 406-834-3413.

ORVILLE LEWIS REMEMBERED

Orville Lewis, a long-time FWP employee, died at his home in Helena last December after an extended illness. During his 33-year career with the department he worked his way up from game warden to deputy director. During that period he saw eight FWP directors come and go, beginning with Robert Lambeth and ending with James Flynn.

A native of Glasgow, Orville served with the U.S. Army in the South Pacific during World War II. He enrolled at the University of Montana following his discharge in 1946 and graduated with a Wildlife Technology Degree in 1950.

Orville's first game warden assignment was in the Lima-Dillon area at a time when snowshoes and horses were still the essential means of transportation into the backcountry. Beginning pay was in the neighborhood of $200 per month; headquarters, office, and home were one and the same.

Wardens were scattered thinly over Montana at that time, but Orville had a good helper that may well have been the original "Deputy Dog." The family pet, Boots, happily accompanied him on his rounds. Whenever a vehicle was stopped at a check station, or for other purposes, old Boots would give it a thorough sniffing. If he returned to Orville, all was well. If he sat by the trunk of a car it was a signal that it contained something that warranted

FWP PHOTO

Orville Lewis in 1954

investigation. Orville's wife, Alida, enjoys telling of an incident when Orville and Boots went to visit a trapper at this cabin late one evening. Soon after pleasantries had been exchanged, Boots proceeded to drag into full view a number of illegal pelts from beneath the trapper's bed.

During those early days, Orville became known as "Little Lord Fauntleroy" among his peers because he was said to carry his own court with him. It seems that Judge Baker of Dillon accompanied him on one of his patrols. When Orville made an arrest the infuriated sportsman threatened to take him to court. "Okay," Orville said, "I'd like you to meet your judge."

After serving as warden supervisor in Miles City from 1953 to 1955, Orville was transferred to the regional headquarters in Missoula. He, Merle Rognrud (game manager) and Art Whitney (fisheries manager) were the first to inhabit the new headquarters. When it came time to paint the building a problem arose. Each had his own idea of a garish color to use—*all three were color blind!* The choice of paint was finally made by their secretary, Beth Miller.

Orville and his family remained in Missoula until 1959, when he was promoted to chief of law enforcement and transferred to Helena. In 1977 he became FWP's associate director, and in 1981 deputy director, a post he held until his retirement in 1983. His budgeting skills and expertise in working with legislators, and his dedication to the department before and after retirement, were widely known and appreciated.—*Vern Craig, Chief, Conservation Education Bureau (retired)*

TIP-MONT: Make the Call

You're sitting at your fly-tying table on a warm September evening. After whip-finishing an elk-hair caddis, you decide to rest your eyes. You grab a retrieving dummy and step outside to release your Lab from his kennel for a romp just before dark.

Your coal-colored companion is wagging his tail eagerly when a rifle shot pierces the late-summer air. You flinch in fright. Recovering quickly, you focus on the road out front where you see an older pickup moving slowly. The two passengers are staring intently into a patch of timber on the opposite side of the road. You walk slowly toward the vehicle, straining to read the license plate number.

Next step: Get in the house, write the information down, then *make the call*. Calling your local game warden at his residence is the most efficient way of reporting a violation. Response time can be fairly quick and he usually has firsthand knowledge of local people and places.

Another option exists, though, particularly for people who are just passing through, are new to the area, or prefer total anonymity: Call 1-800-TIP-MONT (1-800-847-6668).

TIP-MONT, an acronym for Turn In Poachers-Montana, was established in 1986 as a way of increasing the number of eyes and ears in the field. Successful apprehension and prosecution of offenders can lead to a reward for the informant.

The total fine assessed in a particular case determines the reward amount. Typical rewards are $100 to $500. The TIP-MONT reward chest is continually replenished by generous donations from private individuals, groups, and clubs whose primary concern is preservation of Montana's impressive resource base.

During normal business hours, TIP-MONT calls are handled by operators at Montana Fish, Wildlife & Parks headquarters in Helena. After business hours, a dispatcher for the Montana Highway Patrol in Helena receives TIP-MONT calls. Operators record pertinent information and immediately contact the local warden. Informants who call a warden directly are still eligible for rewards and can remain anonymous if they wish.

Boasting almost 150,000 square miles of plains, peaks, forests, and rivers, Montana is home to a phenomenal diversity of wildlife. Fewer than 100 game wardens are entrusted to guard these vast holdings. Clearly, we need help.

A common misconception, however, prevents some people from reporting fish and game violations. The roots of their reluctance have been fed for years by a society whose disdain for informants is traditional. Back in the 1930s, when Jimmy Cagney hitched up his pants, puckered his face, and said, "You dirty rat," we sympathized with his betrayal.

Whether the term is "tattletale" or "squealer," the connotation is the same. This uneasy notion, coupled with a long-held belief that fish and game violations aren't serious transgressions, has prevented many people from speaking up.

Thankfully, attitudes change, albeit slowly. We are starting to realize that wildlife resources belong to all of us, regardless of our interests or pursuits. More and more people are exercising their right to make a difference by refusing to tolerate poaching. Not only is it our right, but it is our duty.

By speaking up, we are proclaiming ourselves as "deeded" owners of Montana's wildlife, a deed that transcends history and guarantees our future.

Please make a difference. Make the call.—*Steve Andersen, Game Warden, Troy*

Dry Conditions Lead to Lower Duck Numbers

The latest numbers from U.S. Fish and Wildlife Service (FWS) researchers indicate what most waterfowl experts had been expecting: Overall breeding duck numbers were down this year because of drier conditions on the prairies of the north-central United States and south-central Canada, where a majority of ducks breed and nest.

The FWS survey counted 40 million breeding ducks this year—down from 42.6 million last year. A dry winter and an early, warm spring meant that many of the potholes and ponds that were full last year are now dry.

"Most populations were down slightly from last year's record-high numbers," says Ducks Unlimited's Chief Biologist, Dr. Bruce Batt. "Mallards were down three percent from last year, but still well above the long-term average for the species, and still above the goals set forth in the North American Waterfowl Management Plan. Other species showed declines from 3 percent to 29 percent, and several actually showed some improvement over last year."

"These breeding population surveys only tell us how many birds are present in the breeding areas, not how many actually attempt to breed," says Batt. "Declining wetland conditions mean fewer ducks attempting to breed, higher predation rates, and lower nest success. So we'll probably end up seeing fewer ducks produced this year than last year, and fewer ducks in the fall flight. In the short term this won't be a problem for most species because they are still at healthy levels. In the long term, however, we'll need more precipitation to sustain these populations."

Pintail and scaup numbers continue to cause concern among waterfowl experts. Pintail numbers have decreased dramatically (down 29 percent from last year) in response to the dry conditions. "We're extremely concerned about pintails," says Dr. Batt. "There are probably more birds outside of the survey area, but with the dry conditions we don't think these birds can be very productive this year. That will likely mean a serious interruption in what we had hoped was the beginning of a recovery for this species."

Scaup continued their decade-long decline. Down 16 percent from last year, scaup numbers have reached an all-time low. "Unlike almost all other duck species, scaup numbers did not rise in response to the excellent conditions over the past several years," says Dr. Batt. "What is causing these declines remains a mystery, and we're afraid something more pervasive than precipitation levels may be at work. Through a number of research projects, Ducks Unlimited and its partners are already hard at work trying to figure out what that might be."

Conversely, blue-winged teal and redheads were at all-time highs this year. Canvasbacks were unchanged from last year and 24 percent above their long-term average.

"Most of these natural fluctuations in duck numbers are nothing to be overly concerned about," says Matthew Connolly, Executive Vice President of Ducks Unlimited. "We are quite concerned about the downward trends in pintail and scaup populations, but most duck species are still well above their normal levels."

"This year's dry conditions are a good reminder of how important our conservation work is," continued Connolly. "We've enjoyed record-high waterfowl numbers in recent years thanks to high levels of precipitation. But as the prairies begin to dry out, we need to make sure good-quality habitat is in place to maintain those populations until the rain and snow return. Ducks Unlimited and its partners are working hard to restore and protect that kind of habitat on the prairies and in other key migration and wintering areas of North America."

With more than a million supporters, Ducks Unlimited is the world's largest wetlands and waterfowl conservation organization. Since its founding more than six decades age, Ducks Unlimited has raised over $1 billion to conserve 8.2 million acres of critical wildlife habitat in the U.S., Canada, and Mexico.

The United States has lost more than half of its original wetlands, and we continue to lose more than 174,000 wetland acres every year.—*Ducks Unlimited*

WAYNE DOWDY FINE ART STUDIOS, SNAPPY SPORT SENTER—PUBLISHER & MONTANA DUCKS UNLIMITED, 406-883-6794

As part of its sponsor's program, Montana Ducks Unlimited has commissioned Polson artist Wayne Dowdy to paint five major works with national park wildlife themes. Shown here is the latest in the series, "Yellowstone Royalty." For more information on becoming a Montana Ducks Unlimited sponsor, contact program chairman Bill Witts at 406-883-4307.

CLINICS HELP WATERFOWLERS LEARN SHOOTING SKILLS

by Paul F. Vang

The hunter and retriever crouched in the cattails as the mallards circled the decoys. Finally, the ducks flew closer and the hunter shot twice. As the flock veered off, the hunter shook his head with disappointment and tried to explain to his dog, "It's that darn steel shot. It just won't drop those ducks."

Tom Roster says, "Don't blame steel shot. You probably don't know how to shoot."

Now, meet the expert and learn why he says that.

Tom Roster is an expert shotgunner, shotgunning ballistics authority, and contributing editor to *Skeet Shooting Review* and *Sporting Clays*. For 22 years, he has researched shotshell ballistics, developed steel shot loads, and presented seminars and field clinics to waterfowl hunters across North America.

Roster is a consultant for the Cooperative North American Shotgunning Education Program (CONSEP), a coalition of 20 state fish and game departments, federal fish and wildlife agencies from Australia, Canada, and the U.S., and several ammunition companies. CONSEP's goal is to help shotgunners adapt to the use of non-toxic shot through education, research, and training. Montana Fish, Wildlife & Parks (FWP) has sponsored CONSEP seminars and field clinics for 13 years.

Roster asserts that many waterfowl hunters underestimate distances to ducks or geese, especially on large-bodied birds like Canada geese. Further, at extended ranges, most don't have shooting skills to consistently and cleanly kill those birds. If you don't believe him, he can prove it. The good news is that hunters can improve their skills.

DAVE BOOKS

The key to hunting success with non-toxic shot is practice during the off-season. FWP holds clinics each summer that help hunters learn proper shooting techniques, the basics of shotgun pattern testing, and range estimation methods.

WATERFOWL MORTALITY

Roster and CONSEP have studied thousands of hunters and conducted autopsies on thousands of ducks and geese to determine what it takes to cleanly kill a bird and reduce wounding.

They have documented that a duck or goose needs to be struck by three or four shot pellets that penetrate through the vital organs in the front half of the bird. Shots such as these also have a better chance of breaking wing bones or hitting the head and neck of the bird, assuring a clean kill. Research has shown that steel shot loads can be effective in doing this, but the skill level of most shooters reduces the range at which birds can be consistently taken.

Based on these studies, says Roster, "The most effective shooting range for most hunters is 30 yards or less." Birds hit at that range are most likely to be put on the dinner table because they have been struck by enough pellets from the shot string. Birds hit at longer ranges are less likely to be centered in the pattern and more likely to escape to die later.

RANGE ESTIMATION

Testing shows that many shotgunners can't accurately estimate distances, especially on geese. CONSEP recommends a method called "subtending" for estimating whether birds are in shootable range. To learn the system, hunters should set out life-size flying decoys or silhouettes and study how they look at the end of a shotgun barrel, noting how much of the head/neck and tail extends beyond the end of the gun barrel at 30 and 40 yards. It takes practice, but it's a quick and accurate way to determine if a duck or goose is in shooting range.

Shooting Skills

If waterfowl need to be shot at 30 yards or less to assure quick, clean kills, shooters should be capable of hitting their target 75 percent of the time at that range. In CONSEP field clinics, shooters start by shooting at crossing clay pigeons at 20 yards. Most shooters fail this challenge.

However, good shooting skills can be learned, and Roster coaches shooters to achieve 75 percent or better shooting success at 30-yard targets. Roster, who has developed the skill to see the shot string in the air, works with shooters and calls each shot, "You're behind." "You're ahead." "You shot over." Gradually, more and more comments are, "Crunch!" "That's the way to shoot."

Once shooters improve, they need to practice. "Baseball players will swing at thousands of baseballs. Tennis players will hit thousands of tennis balls," Roster points out. "Yet, hunters put their guns away at the end of the season and don't shoot again until the next season, and wonder why they can't hit anything." Hunters should shoot at hundreds of clay targets before the season, whether it's at trap, skeet, or sporting clays, says Roster. "It's also important to practice with loads similar to those you hunt with. Practicing with lead won't necessarily improve your shooting with non-toxic loads."

One youthful shooter at a 1997 seminar was happy, saying, "It was fun. I really learned a lot." Some older shooters found it frustrating. Roster says that it's probably easier to teach a beginning shooter, because "They have fewer bad habits to break."

Non-Toxic Shot

In Montana, non-toxic shot has been required for waterfowl hunting since 1988. It is also required for upland bird hunting on federal waterfowl production areas and national wildlife refuges. Although these requirements aren't new, many hunters are dissatisfied.

Shooters have to overcome the myth that they will ruin their shotguns by using steel shot. Roster is emphatic that there is no objective evidence of gun damage caused by steel shot. He cites "destruction testing" by Remington and CONSEP in which thousands of rounds were fired through a variety of guns. No barrels were split, no double-gun barrels separated. The only damage was minor "ring bulge" in 2 percent of the guns. Ring bulge, a slight bulge occurring at the choke point of the barrel, does not affect the performance of the gun. It can also occur using lead shot.

JIM HANSEN

Observing how waterfowl silhouettes look over the gun barrel at various distances can help hunters determine when ducks or geese are in range.

Steel Shot Alternatives

Since the 1980s, ammunition companies have looked for alternatives. Two recent developments are bismuth and tungsten shot. While both bismuth and tungsten loads are hyped as being the long-sought best alternative to steel shot, there is a problem with price. The cost of making lead shot pellets is 45 cents per pound, compared with 85 cents for steel. The cost of bismuth pellets, however, which have a weight and density similar to lead, is $4.00 per pound. The raw materials for tungsten pellets, a mixture of iron and tungsten, aren't expensive, but the complex shot-making process puts the price into the bismuth range. A box of 25 steel shot loads costs about $10, while a box of only 10 bismuth or tungsten shells currently sells for around $13.

Roster predicts that steel shot will continue to be the non-toxic shot used by most hunters. People who don't mind paying a premium price will be the main buyers for bismuth and tungsten shot. The important thing, he stresses, regardless of the shot type used, is that hunters "pattern test" their shotgun to determine the shot load and choke combinations that produce the most effective patterns at typical shooting distances. The CONSEP steel shot lethality table in the Montana migratory bird hunting regulations is a good reference for steel shot loads.

Jeff Herbert is FWP's chief waterfowl biologist and a waterfowl hunting enthusiast. He has worked with Roster for 13 years, and is currently working with CONSEP to produce a video that captures the message of the seminars and clinics. "It's clear," says Herbert, "that there's a history of problems in waterfowl hunting with wounding and loss of birds, regardless of shotshell type. There's a lot we can do to help conserve the resource and perpetuate the tradition of waterfowl hunting, and with these efforts we hope to reach many more people."

Herbert endorses CONSEP and the Roster seminars as an essential education and information effort to preserve waterfowl hunting as a part of our heritage. "Here in Montana," he says, "we're a significant producer of waterfowl but we have a small hunter base." In the 1970s, about 25,000 people hunted ducks and geese. In the late 1980s, as the result of an earlier pesticide scare, drought-diminished waterfowl numbers, and non-toxic shot requirements, the number of waterfowl hunters dropped to just over 13,000. Hunter numbers have come back in the 1990s, rebuilding to 24,000 in 1997. Nationally, waterfowl hunter numbers have increased in recent years, but Herbert notes there are still a million fewer waterfowl hunters than there were 20 years ago.

The late 1990s will be remembered in years to come as "the good old days," with abundant duck and goose populations. With good shooting and improved hunting skills, waterfowl hunting will be productive and enjoyable for years to come.

For more information on CONSEP shooting clinics in Montana, write: Wildlife Division, FWP, 1420 East Sixth Ave., Helena, MT 59620-0701, or phone 406-444-2612.

GRIZZLY STORY TRIGGERS FLASHBACK

Roland Cheek's account of a singular grizzly called the "Dairy Queen Bear" in the March/April issue flashed me back 34 years. At that period I was U.S. District Forest Ranger on the upper reaches of the South Fork of the Flathead.

From a book I am working on, the following unedited, abbreviated excerpts are offered:

"I was always with Tom, my stout buckskin quarter horse gelding, and we were shuffling almost silently along a steep hillside trail that led into "The Basin." Around an abrupt ridge and beyond in the scattered lodgepole pines was "Sarah," a mature sow grizzly. She wore shaded colors of sable lightly brushed with white hair tips. She surely was feminine, sitting on her rump, spread legged and not unlike a concert cello player. She was tediously grinding her back against a sharp-knotted tree trunk to remove old winter hair. It was early spring.

...Tom and I were heading southeast along Danaher Creek. Under the evening shadow of Ursus Hill we saw "Rachel." She was the blackest silver-tipped grizzly I've ever seen. Two scrawny cubs were by her side. They were cranky. We discreetly left her grounds.

....In a territory named for Charlie "Kid" Young, an early 1900s forest ranger, I faced "Charlie" on a brilliant day in early November. My God he was a great, huge grizzly; a non-gentle giant, metallic black with unquestionable silver-tipped shoulders and back. Dark-ringed spectacles surrounded his eyes. Tom and I met this big bruin along a spruce-shrouded trail in Youngs country. With ears erect, fluted forward and nostrils flared, Tom arched his neck and stiffened all over. We both made contact into Charlie's small, faraway eyes. I thought, 'Don't even think about fishing in the saddle bags for the .44 Magnum. You don't have time.' Charlie raised up like a watchful prairie dog scanning for ferrets. He shook his head insanely, blew his nose, snorted, and dropped to four feet. In an instant he disappeared."

Through the years I saw Sarah, Rachel, and Charlie several times. One mid-November, when black clouds slammed deepest snow onto the forest, I rode out of the South Fork not knowing I would never return. I was never to see this grizzly trio again.—*Jack Dollan, Whitefish*

CHECK IT AT THE GATE

On page 17 of the July/August issue you have an article titled "Oiling the Gate Latches," dealing with landowner/sportsman relationships. It includes a list of "points to remember when recreating on private land," and, being a part-owner of some land left to me by my parents, I thought I'd mention a couple of items you might add to the list if you ever publish anything like your article again. Or, you could mention it in a later issue. Two items that were important to my father when hunting season arrived and hunters asked to hunt on his land were whether the hunters were smoking and whether they appeared to be drinkers. A hunter willing to "check his cigarettes and alcohol at the gate" or at least volunteer to use either in a minimum fashion while on my father's land met a better reception. In the days of dry summers and falls, careless smoking can lead to prairie fires. A hunter who has been drinking too much sometimes is not as careful as he normally would be sober, and on occasion animals such as cows, horses, and bulls become mistaken targets for hunters who have over-indulged in alcohol.—*Name withheld by request*

Thanks for your comments; we agree about the dangers of smoking when conditions are dry. As for alcohol, it just plain doesn't mix with hunting, even in moderation.—Editor

PHOTO REKINDLES MEMORIES

The March/April 1998 issue of *Montana Outdoors*, with a recent photograph of the Yaak River, has personal interest for me. The summer of 1946, at age 17, I worked in Kootenai National Forest eradicating *Ribes* and fighting forest fires—the Fan Creek fire near Rexford for two days. Stationed at Sylvanite Ranger Station and Red Top Camp, I spent idle time flyfishing the Yaak. At the conclusion of that summer I was a guest of Glacier Park Hotel, them having seen the smoke from the Fan Creek fire and learning that I had been there to fight it.—*Edward W. Rogers, Paul Smiths, NY*

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BOOKSHELF

A WOMAN'S WAY WEST: IN AND AROUND GLACIER NATIONAL PARK FROM 1925 TO 1990, by John Fraley, Big Mountain Publishing, Inc., 220 2nd St. East, Whitefish, MT 59937; 1998, 238 pages, soft cover, $16.95.

Doris Ashley left Iowa in 1925 for a summer job in Glacier National Park, and fell in love with northwestern Montana's scenery and wildlife. A few years later she married backcountry park ranger Dan Huffine, and together they shared a life working in the park, operating tourist camps along the park boundary, and as proprietors of the Huffine Montana Museum near Kalispell. Doris Huffine's energy, hardiness, and determination proved more than a match for the region's harsh winters and tough economic times. Author John Fraley first met Doris in 1979, and from that time until her death in 1990 he listened to and recorded her recollections. His biographical research, together with more than 100 black-and-white historical photos, provides a unique glimpse into Glacier-area history and a compelling account of a remarkable woman's adventurous life.

IN PRAISE OF WILD TROUT, edited by Nick Lyons, The Lyons Press, 31 West 21st St., New York, NY 10010; 1998, 112 pages, hard cover, $20.

A celebration of wild trout by some of America's finest writers, including Montanans Datus Proper and Tom Palmer, this anthology combines essays on the pleasures of trout fishing with perspectives on wild trout biology and preservation. As Palmer points out in his chapter entitled "Trout Habitat in the Blackfoot Country," wild trout need "water quality, sufficient water flows, varying water velocities, cool temperatures, [and] an organic streambed inviting to many forms of aquatic life....We need a Marshall Plan that seeks to restore not what we think once existed in a natural state, but what could be called the possibility of ecosystem health based on the condition of our watersheds beginning with the health of our rivers and streams." From the essays of John Gierach and Christopher Camuto to the scientific studies of Dr. Robert Behnke, this book is required reading for all who enjoy the beauty and spirit of wild trout and wish to ensure their protection.

THE PHANTOM GHOST OF HARRIET LOU, AND OTHER ELK STORIES, by Roland Cheek, Skyline Publishing, P.O. Box 1118, Columbia Falls, MT 59912 (1-800-821-6784); 1998, 352 pages, soft cover, $19.95.

If you like elk and elk hunting, or if you just enjoy good hunting stories, you'll like this book. Roland Cheek has drawn on more than 40 years of elk hunting experience (21 years as a guide and outfitter in Montana's Bob Marshall Wilderness) to produce an entertaining and informative mixture of stories and how-to information. You'll get practical advice on selecting a hunting area, the equipment you'll need, and on hunting techniques that work best for these amazing big game animals, which Cheek likens to oversized white-tailed deer: "Whitetail bucks and bull elk are canny creatures with many of the same habits and instincts. Both represent the ultimate in American hunting challenge, trophy, and tradition." But more important, you'll gain an appreciation for elk, the spectacular country they inhabit, and the diverse wildlife they share it with, as well as a perspective on the true meaning of hunting.

WOMAN THE HUNTER, by Mary Zeiss Stange, Beacon Press, 25 Beacon St., Boston MA 02108-2892; 1997, 240 pages, hard cover, $25.

Mary Zeiss Stange, who teaches religion and women's studies at Skidmore College in New York and makes her home in Montana when she is not teaching, explores the cultural history of hunting and challenges the typical stereotypes of women as innately more passive, less violent, and closer to nature than men. More than 2.5 million women hunt, says Stange, and participation is growing. She argues that hunting is important for men *and* women as a way of engaging with and being aware of our inevitable place in the web of life. Stange, who operates the Crazy Woman Bison Ranch near Ekalaka with her husband, combines personal essays with academic research in this thought-provoking look at hunting and women's relationships to the natural world.

DRIFT BOAT STRATEGIES: ROWING & FISHING SKILLS FOR THE WESTERN ANGLER, by Neale Streeks, Pruett Publishing Co., 2928 Pearl St., Boulder, CO 80301; 1997, 192 pages, soft cover, $19.95.

A fishing guide who lives in Great Falls, Neale Streeks has spent plenty of time on the oars of a drift boat. He has put his experience to good use in this book, which includes chapters on basic rowing skills, reading moving water and avoiding hazards, flyfishing from a boat, choosing and outfitting a boat, rigging up for a multi-day float trip, and boat trailering. As Streeks explains, a drift boat angler gains new perspectives on a river's subtleties, from trout behavior to insect hatches: "The water's character, fish behavior, insect hatches, and other phenomena of the river world must be understood if a float fisherman is to do his best." The book includes a number of useful diagrams, black-and-white photos, and a handy appendix detailing hatches and fly patterns for western rivers.

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Contributors

Montana's ruffed grouse aren't found just any place, says **Dave Carty**, but they're not always where they're supposed to be, either. He recommends streamside habitat with plenty of berries and aspen groves in the vicinity. To help you find and flush birds from the brushy tangles, a bird dog is a definite help: "Aside from the wear and tear it will save your tired, aching body, dogs make hunting more fun, as well as more productive." For a primer on hunting these sometimes exasperating gamebirds, turn to "Grouse of a Different Color" on page 2. Carty, who chases grouse with a setter and a Brittany, is a Bozeman-based freelancer.

Auchly

The third week in September is an exciting time for hunters and anglers, floaters and hikers, photographers and leaf watchers. Leaves change color, elk bugle, pronghorns gather harems, birds migrate, and brown, brook, and bull trout spawn. What force urges on everything under the sun this time of year? According to **Bruce Auchly**, "It *is* the sun, or rather, daylight length. Scientists call it photoperiod." Regardless of the scientific explanation, "Autumn Changes" (p. 7) add up to a sportsman's delight, says Auchly, who is FWP's information officer in Great Falls (Region 4).

We've all seen them in outdoor magazines: idyllic hunting camp scenes, canvas tents stretched taut and horses grazing peacefully in the background. But the true picture of such hunting camps, says **Alan Charles**, involves "slipped hobbles, pulled picket pins, and hunters staring mournfully off into the distance or standing with ears tipped hopefullly into the wind as they listen for a nonexistent bell mare." To get the lowdown on "Hunting on Horseback," read Charles' article beginning page 13. "Now, don't get me wrong," he says. "I like hunting with horses. I've even had a hunt or two when some things actually went right. But more often, horseback hunts are simply adventures—sometimes riddled with terror, other times simply studies in patience and endurance." Charles, an avid horseman, is FWP's landowner/sportsman coordinator in Helena.

Fraley

Montana bowhunters are dedicated to preserving their sport. So much, in fact, that they asked the legislature a few years back to require first-time bowhunters of any age to complete a bowhunter education course. As a result, say **John Fraley** and **Tim Pool**, nearly 18,000 students have been certified since the program's inception. More than 500 volunteer instructors statewide are "Keeping the Faith" (p. 17) by teaching a course that includes safety training and stresses ethics and the importance of personal responsibility. Fraley is FWP's information officer in Kalispell, and Pool is the department's hunter education coordinator in the Helena office.

Pool

According to **Sam Curtis**, the antlers and horns of big game animals are quite different in their make-up and growth. Antlers are actually bones that grow each year—after the rut, when bucks and bulls no longer need them to advertise their virility, the antlers fall off. Horns, on the other hand, are not made of bone but of layers of hardened epidermal cells. They are not shed annually, except in the case of the pronghorn, which sheds its horn sheath every year. To find out how they grow, and what accounts for their different sizes and shapes, turn to "Antlers and Horns" beginning on page 22. Curtis is a freelance writer who lives in Bozeman and writes often on natural history subjects.

Curtis

Early autumn is a time for hard decisions. Should I fish, bird hunt, bowhunt...or lay in the winter wood supply? If you're like **Leo Keane**, you'll get your chores done first, but you may be dreaming of casting a fly line "on a cool river between the sun-filled mountains...where rainbow trout are slapping at grasshoppers" (p. 26). A dedicated flyfisher and birder, Keane lives in Whitefish.

MO thanks the following artists and photographers for their contributions to this issue: **Erwin & Peggy Bauer**, Sequim, WA; **Denver Bryan**, **Dave Carty**, and **Dale C. Spartas**, Bozeman; **Tim Christie**, Coeur d' Alene, ID; **Wayne Dowdy**, Polson; **Gene Fischer**, Helena; **Larry Javorsky**, Hamilton; **Donald M. Jones**, Troy; **Mel & Cherrie Kieninger**, Havre; **Dave McGee** and **Richard Mousel**, Great Falls; and **Tom J. Ulrich**, West Glacier. Thanks also to the following employees who work for the department: **John Fraley**, Kalispell; **Mike Gurnett**, Helena; and **Jim Hansen**, Billings.

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